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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,379	12/23/2003	Kazuyoshi Chikugo	ASAIN0135	6961

24203 7590 10/16/2006

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EXAMINER

KEMMERLE III, RUSSELL J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,379

Applicant(s)

CHIKUGO, KAZUYOSHI

Examiner

Russell J. Kemmerle III

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/23/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The disclosure is objected to because of the following informalities:

Page 1 lines 21 and 23: the reference to "Patent Literature 1" should be replaced by the actual patent number being referred to.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Vail (Ceramic Structures by Selective Laser Sintering of Microencapsulated, Finely Divided Ceramic Materials).

Referring to Claim 1, Vail discloses a method of selective laser sintering a polymer coated ceramic powder in order to form a ceramic green article (pp 125-126), and infiltrating the green article with a ceramic cement and then firing the infiltrated green article (page 126).

Referring to Claim 2, Vail is relied upon as discussed above. Vail further discloses using a ceramic cement that is primarily colloidal silica, or a silica/alumina mixture (page 125 and Table 3).

Thus, Vail discloses, or reasonably suggests every limitation of Claims 1-2, and thus anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vail in view of Osawa (5,702,501).

Vail is relied upon as discussed above, which fails to teach the method of surrounding the created ceramic piece with a heat resistant powder during heating to prevent the piece from deforming.

Osawa discloses a method of burying an article in a ceramic powder during heating and sintering to prevent the article from deforming (Col 2 lines 23-44).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have modified the method taught Vail of using selective laser sintering to form a ceramic article, and infiltrating that article with a ceramic reinforcing liquid and heating the resulting product by using the method disclosed by Osawa of

firing an article while it is buried in a ceramic powder in order to prevent the article from deforming during firing.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vail in view of Langer (6,155,331).

Vail is relied upon as discussed above, but fails to teach a cast product made from the ceramic article produced in the manner discussed above.

Langer discloses a method for creating a ceramic core by selective laser sintering a resin coated ceramic powder, and subsequently using that core to cast parts of molten metal (Col 1 lines 4-6, Col 2 lines 26-42, Claims 1, 4, 6-7, 19-20).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have modified the method disclosed by Vail of creating a ceramic article by selective laser sintering a polymer coated ceramic powder to create an article of a desired shape, infiltrating that article with a ceramic cement, and then firing the article with the method taught by Langer of using a ceramic article created by selective laser sintering a resin coated ceramic powder to create casts of molten metal since Langer discloses that this is an effective use for a product created by such a process.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 2004/0,262,821 and 4,290,984 both relate to impregnating a ceramic body with another material. 2006/0,145,381; 2005/0,029,711; 2004/0,152,581


and 5,616,294 all relate to selective laser sintering of a ceramic product to create a 3D article.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell J. Kemmerle III whose telephone number is 571-272-6509. The examiner can normally be reached on Monday through Friday, 8:30-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RK


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